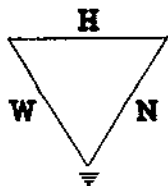


APR 21 1993



**Wagner, Heindel, and Noyes, Inc.** consulting geologists

P.O. Box 1629 Burlington, Vermont 05402-1629 802-658-0820

April 16, 1993

Ms. Lynda Wedderspoon  
Site Manager  
Sites Management Section  
Hazardous Materials Management Division  
Agency of Natural Resources  
103 South Main Street/West Building  
Waterbury, VT 05671-0404

RE: University of Vermont Dewey Hall  
Tank Site Investigation Project  
Site #92-1317

Dear Ms. Wedderspoon:

Enclosed please find a copy of the Dewey Hall Tank Site Investigation Report. Included in the report are sampling and analytical results as you requested in your letter to Mr. Michael Sparks, of this firm, dated December 8, 1992.

If you have any questions or comments, please feel free to call myself or Jeffrey Noyes at 658-0820.

Sincerely,

Timothy Wales  
Environmental Engineer

TW/ral

Enclosure

cc: Mr. Bob Howard, UVM

[L-WEDDERSPOON/TW 3-2-93]

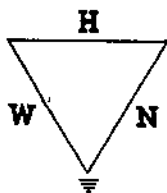
APR 21 1993

# THE UNIVERSITY OF VERMONT

## DEWEY HALL TANK SITE INVESTIGATION REPORT

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**Wagner, Heindel, and Noyes, Inc.** consulting geologists

P.O. Box 1629 Burlington, Vermont 05402-1629 802-658-0820

## THE UNIVERSITY OF VERMONT

### DEWEY HALL TANK SITE INVESTIGATION REPORT

#### SUMMARY

On January 14 and 15, 1993, Wagner, Heindel, and Noyes, Inc. (WH&N) installed three monitoring wells on the property of Dewey Hall at The University of Vermont. These wells were installed in order to establish that the subsurface of the Dewey Hall property had not been contaminated by fuel oil which leaked from a former 6,300-gallon tank and its associated piping. This underground storage tank was removed on October 20, 1992. One upgradient and two downgradient wells were installed via hollow stem auger completion techniques. Subsequent to the installation of the wells, each well was purged of approximately three standing casing volumes and sampled. Each sample was analyzed according to EPA Method 624 protocols.

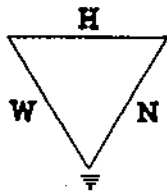
Drill cuttings from the monitor well installation were examined periodically with a photoionization detector (PID) during drilling operations. No contamination was noted by visual inspection or by examination with the PID.

Split spoon samples were taken approximately every five feet during drilling operations and were examined visually and with the PID. No contamination was noted in any of the split spoon samples taken.

Each of the three monitoring wells, MW-1, MW-2, and MW-3, were sampled on January 26, 1993. All wells were developed before sampling and each sample was analyzed according to EPA method 624 protocols. In two of the three monitor wells, trace levels of 1,1,1-Trichloroethane was detected. This contaminant is not believed to have originated from the underground storage tank for two reasons. One of the wells registering this contaminant (MW-1) is upgradient of the former tank site. Based on what we know of subsurface conditions, it is unlikely that the contaminants could have migrated upgradient to this well<sup>1</sup>. In our experience, contaminants of this nature are generally not found by themselves in cases of fuel oil contamination. If contamination from the former fuel oil storage tank were the source, we would expect detectable levels of Benzene, Toluene, Xylenes, and Ethylbenzene in association with the solvent.

<sup>1</sup> Where Free Phase DNAPL exists upgradient product migration may occur. However dissolved phase concentrations do not suggest the presence of DNAPL.

It is believed that the 1,1,1-Trichloroethane may have leaked from the sewer running through the parking lot of Dewey Hall. However, the levels of this contaminant in the site groundwater are well below the State of Vermont groundwater standard of 200 ppb, so this is not considered a violation of ANR regulations.



**Wagner, Heindel, and Noyes, Inc.** consulting geologists

P.O. Box 1629 Burlington, Vermont 05402-1629 802-658-0820

## **THE UNIVERSITY OF VERMONT**

### **DEWEY HALL TANK SITE INVESTIGATION REPORT**

#### **1.0 INTRODUCTION**

On October 20, 1992 a 6,300 gallon No. 2 heating fuel oil underground storage tank (UST) was removed from the parking lot at the north side of Dewey Hall on the campus of the University of Vermont. The tank hull was found to be in good condition with no evidence of leakage. However, on or about October 1, 1992, the University had discovered and repaired a leak in the fuel return line serving this tank. The quantity of fuel oil released to the subsurface via the return line leak is unknown.

PID screening of the tank excavation found that the lateral migration of the contaminants in the unsaturated zone appeared to be limited to the tank site proper. Approximately 50 yards of contaminated soils were removed from the site in preparation of the installation of a new fuel oil storage tank. As the water table was not encountered during the tank removal, it could not be determined if groundwater had been impacted by the petroleum release.

On January 14, and 15, 1993, Wagner, Heindel, and Noyes, Inc. (WH&N) undertook an investigation of the subsurface surrounding Dewey Hall. This investigation was performed to ascertain if any fuel oil from the former 6,300-gallon underground storage tank or associated piping had impacted soil or groundwater. The site location is included in Appendix 1, page 1.

This investigation involved research into the types and composition of the native soils onsite, installation of one upgradient and two downgradient monitoring wells, examination of the subsurface soils during drilling operations, development and sampling of the completed wells, and a sensitive receptor survey in basements surrounding the area.

The search for contaminants during drilling and in buildings during the sensitive receptor survey was supplemented with field testing for volatile organic compounds (VOCs) using a photoionization detector (PID)<sup>2</sup>.

## 2.0 SITE LOCATION AND PHYSIOGRAPHY

The location of Dewey Hall, presently owned by the University of Vermont, is shown on a USGS Topographic Map (Appendix 1, page 1). Dewey Hall is an educational and research facility located at the intersection of South Prospect Street and Pearl Street on the campus of the University of Vermont. The building uses No. 2 fuel oil for heating and hot water. The original heating oil storage facilities consisted of a 6,300-gallon primary UST and a secondary or standby 500-gallon UST. A sketch of the building site is located in Appendix 1, page 2.

The 6,300-gallon UST was situated between an above-ground standby electric generator and the north wall of Dewey Hall. This tank was removed. The 500-gallon UST has also been decommissioned. The current fuel supply for the standby generator is an above ground 275-gallon tank.

Dewey Hall is surrounded by several other University facilities. The UVM Outing Club is located approximately 100 feet to the east and the Lambda Iota fraternity is located approximately 300 feet to the west of the site. Surrounding commercial properties include the Vermont/New Hampshire Red Cross located approximately 75 feet to the north, the Odessa Corporation located approximately 200 feet to the northwest, and the MCHV Children's Center, located approximately 100 feet to the east. The southern margin of the site is bounded by Pearl Street, while the eastern margin of the site is bounded by South Prospect Street.

There are no known public or private water supply wells in the vicinity of Dewey Hall. This area of the city is served by a municipal water system.

Soil mapping identified in the soil survey of Chittenden County by the Soil Conservation Services of the US Department of Agriculture indicates that the soils on the site are of the

Adams-Windsor association. These are generally deep, moderately well drained, sandy soils of deltaic origin overlying lacustrine deposits or glacial till. The unconsolidated materials at the site consists of approximately 3-4 feet of loamy, brown sandy fill, which in turn, is underlain by dry loamy fine to medium fine sand with abundant pebbles and small cobbles for about 10 feet. Below this level, the soil then becomes damp and gravelly until approximately 20 feet bgs. The water table at the site is approximately 20-25 feet bgs and lies in a tight grey-brown very fine sandy layer. The topography of the site exhibits a 2% to 3% slope to the west.

### 3.0 MONITORING WELL INSTALLATION

On January 14 and 15, 1993, Wagner, Heindel, and Noyes, Inc. (WH&N) installed three monitoring wells on the Dewey Hall property at the University of Vermont. One upgradient well, MW-1, and two downgradient wells, MW-2, and MW-3, were installed via hollow stem auger completion techniques. Split spoon samples were taken at approximately five-foot intervals in each well until completion. Well installation logs and well construction diagrams are included in Appendix 2, pages 1 - 5.

The split spoon samples and auger spoils recovered during drilling operations were screened for the presence of volatile organic compounds using an H-Nu model PI-101 photoionization detector equipped with a 10.2 eV probe. Recovered soil samples were also carefully logged and stored for future laboratory analysis if needed. At no time during the drilling operations were any readings above background values detected in either the split spoon samples or auger spoils.

All monitoring wells were constructed of 2" flush-coupled PVC pipe with factory slotted 0.020" screen sections. Since the soils at the site were relatively fine grained, polyester filter socks were employed along with a sand filter pack to minimize sediment flux into the well bore. Bentonite was used to seal the annular space around each well from surface water infiltration. MW-1 was finished with a 2-foot stickup well casing with padlock. MW-2 and MW-3 were finished with locking road boxes sealed with concrete to protect the wells from damage and unauthorized access.

#### 4.0 GROUNDWATER QUALITY TESTING

On January 20, 1993, each monitor well was developed to set the sand filter and to remove sediments from the well bore. On January 26, 1993 the wells were revisited for sampling. Water levels were taken and each well was checked for the presence of free-phase product. Each well was then purged of three standing volumes of water before sampling.

Clean PVC bailers were utilized for sample collection from each monitor well. A trip blank was also collected for sampling QA/QC. Samples were placed in 40-ml glass VOA containers, preserved with Sodium Azide and kept chilled until delivered to the laboratory. Each sample was analyzed in the laboratory for volatile organic compounds via EPA Method 624. Analytical sheets are enclosed in Appendix 3, pages 1 - 8.

During sampling, each well was checked for the presence of free phase product, sheens and odors. At no time during sampling were any of these observed.

Analytical results (enclosed in Appendix 3) show that no BTEX compounds, which are usually found in fuel-oil-contaminated samples, were present in the samples from the three monitor wells. However, very slight quantities of 1,1,1-Trichloroethane were detected in samples taken from upgradient monitor well MW-1 and downgradient monitor well MW-2. MW-3 was free of any contamination.

#### 5.0 SENSITIVE RECEPTOR SURVEY

The sensitive receptor survey consisted of a PID vapor survey of the interior of Dewey Hall and other structures on properties surrounding the tank site. Particular attention was paid to identifying and testing structures with basements. Structures surveyed in addition to Dewey Hall include the UVM Outing Club, the UVM sailing club, the Vermont/New Hampshire Red Cross, and the Lambda Iota Fraternity. The Odessa Corporation Office was not tested as the basement access was in the adjoining structure and it was not accessible.

As Burlington is served by a municipal water system, there are no drinking water supply wells in use in the vicinity of the site. Likewise, there are no known sensitive environmental areas (such as wetlands) in the vicinity of the site. Thus, the sensitive receptor survey focused primarily on the potential routes of exposure from petroleum vapors.

PID readings in the basement of the UVM Outing Club were the same as background levels except in one area where a PID reading of 2.4 ppm above background was detected. At the time of the reading, a student was cleaning a bicycle chain with an open container of solvent. No other PID readings above background levels were noted in any of the buildings or basements surveyed.

## 6.0 DISCUSSION AND CONCLUSIONS

Based on our investigation of the Dewey Hall site, we conclude that the fuel oil which leaked from the return fuel line has not significantly effected soil or groundwater.

During installation of three monitor wells, the auger spoils and split spoon samples at five-foot intervals were examined visually and with a photoionizing detector (PID). There was no evidence of contamination in any of the soil samples tested.

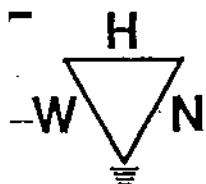
During development and sampling of the one upgradient and two downgradient monitor wells, no free phase product or petroleum odors were noted. Water samples from each well showed none of the BTEX compounds one would expect if fuel oil contamination were present.

The upgradient well (MW-1) and one of the downgradient wells (MW-2) did, however, reveal trace quantities of 1,1,1-Trichloroethane of TBQ (Trace Below Quantitation limit) and 9.3 ppb, respectively. The presence of this compound is most likely the result of leaks in the building's sewer line and not from the fuel oil leaked from the removed tank and piping. This is evidenced by the fact that it is present in one upgradient and one of the two downgradient wells only. The concentration of this compound is well below drinking water standards set by the State of Vermont at 200 ppb.

The sensitive receptor survey conducted after installation of the monitor wells showed no organic vapors present in any of the downgradient basements surrounding Dewey Hall. A small PID reading was noted in the basement of the UVM Outing Club although this was attributed to an open container of solvent used for bicycle cleaning. There were no vapors noted in Dewey Hall itself, either.

WH&N recommends that no further action be taken at the Dewey Hall site at the University of Vermont, and that this site should be determined clean by the State of Vermont Agency of Natural Resources.

[RPT-UVMDEWEY/TW 3-2-93]



Wagner, Heindel, and Noyes, Inc.

Consulting Geologists

Burlington, Vermont

1

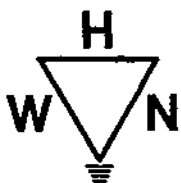
Page No.

PAGE 1 OF 1

PROJECT: WVH/Dewey Hall

DATE: 3/22/93





# Wagner, Heindel, and Noyes, Inc.

Consulting Geologists

Burlington, Vermont

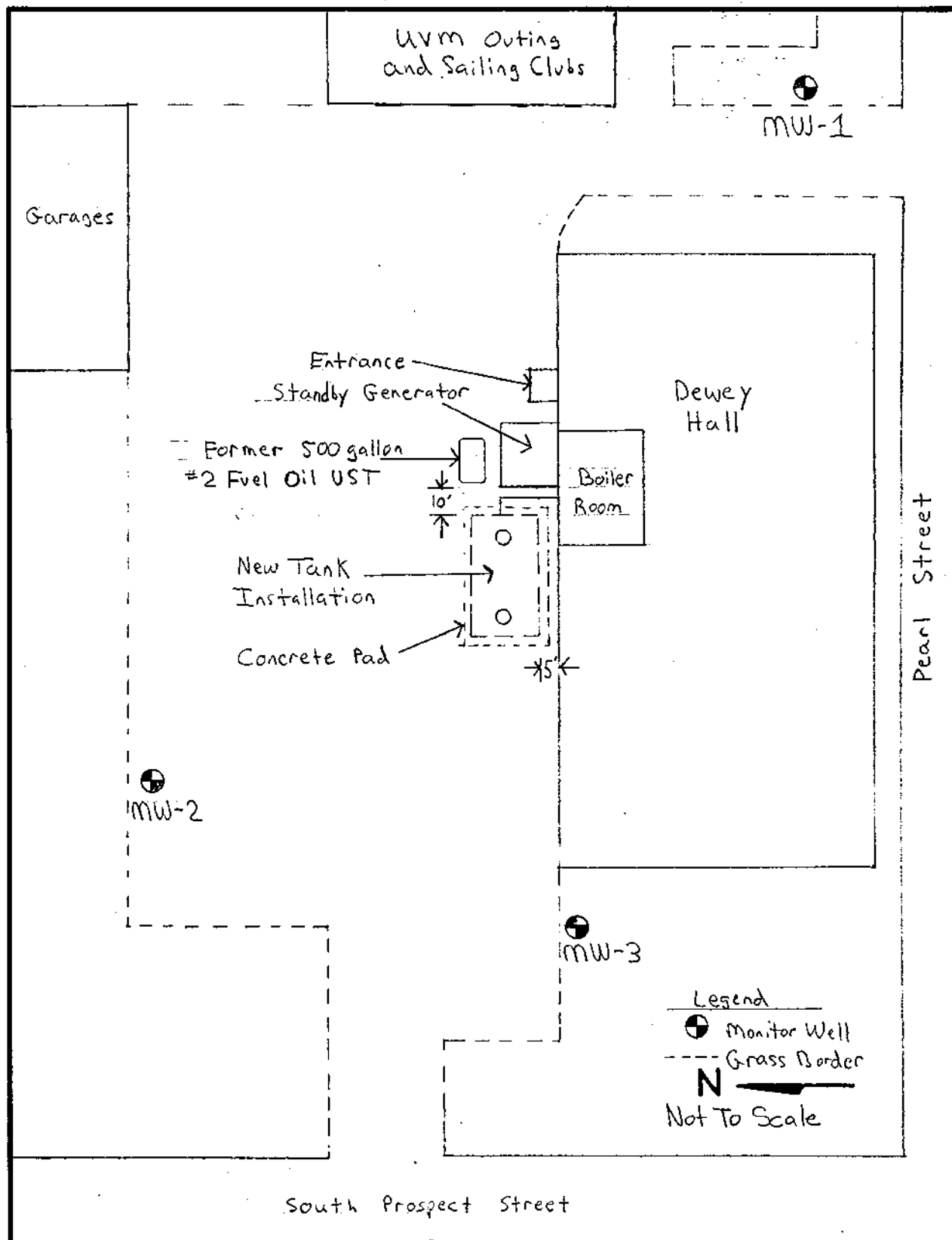
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Page No.

PAGE 1 OF 1

PROJECT: Wm/Dewey Hall

DATE: 3/22/93



**UNIVERSITY OF VERMONT**  
**DEWEY HALL**  
**BURLINGTON, VERMONT**

**WELL DRILLING LOGS**

**January 15, 1993**

**Page 1**

Well Site Engineer: Timothy Wales, Wagner, Heindel, and Noyes, Inc.  
 Driller: Raymond Gilfillan, Tri-State Drilling and Boring  
 PID: H-Nu PI101 with 10.2 eV Probe  
 Calibration: 100 PPM isobutylene standard  
 Weather: Heavy snow, 15° F

**MW-1**

*Located approximately 20' to the east of Dewey Hall. (Background PID = 0.2 ppm)*

Depth: 0' - 4.0' no sample	Dark brown, sandy fill with medium size cobbles. PID = 0.2 ppm
Depth: 4.5' - 6.5' Recovery: 1.6' Blows: 8-10-18-21	Light brown sandy loam with orange tinge. Many cobbles present. PID = 0.2 ppm
Depth: 9.5' - 11.5' Recovery: 1.7' Blows: 18-42-77-55	Dense, tight, rocky loam indicating hardpan layer. Medium brown in color, occasional large gravel chunks. PID = 0.2 ppm
Depth: 14.5' - 15.5' Recovery: 1.1' Blows: 20-57	Dense, rocky material continues. PID = 0.2 ppm
Depth: 19.5' - 20.0' Recovery: 0.9' Blows: 98	Tight gravelly loam. High percentage of weathered rock. PID = 0.2 ppm
Depth: 24.5' - 25.5' Recovery: 1.0' Blows: 35-87	Tight, brown, loamy sand. Orange tinge present. Soil is moist, indicating possible presence of groundwater. PID = 0.2 ppm
Depth: 29.5' - 31.0' Recovery: 1.4' Blows: 37-52-78	Grey, coarse, saturated sand. PID = 0.2 ppm

**MW-2**

*Located approximately 40' north of Dewey Hall, on Red Cross Building side of parking lot. (Background PID = 0.2 ppm)*

Depth: 0' - 4.0' no sample	Brown, gravelly fill made up of sand and 0.5" - 1.0" cobbles. PID = 0.2 ppm
Depth: 5.0' - 7.0' Recovery: 1.4' Blows: 3-5-6-6	Silty, fine, orange-brown sandy layer. PID = 0.2 ppm
Depth: 10.0' - 12.0' Recovery: 1.5' Blows: 8-13-13-17	Dense, tight, rocky loam with medium brown color. PID = 0.2 ppm

**UNIVERSITY OF VERMONT  
DEWEY HALL  
BURLINGTON, VERMONT**

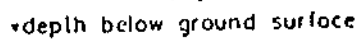
**WELL DRILLING LOGS**

**January 15, 1993**

**Page 2**

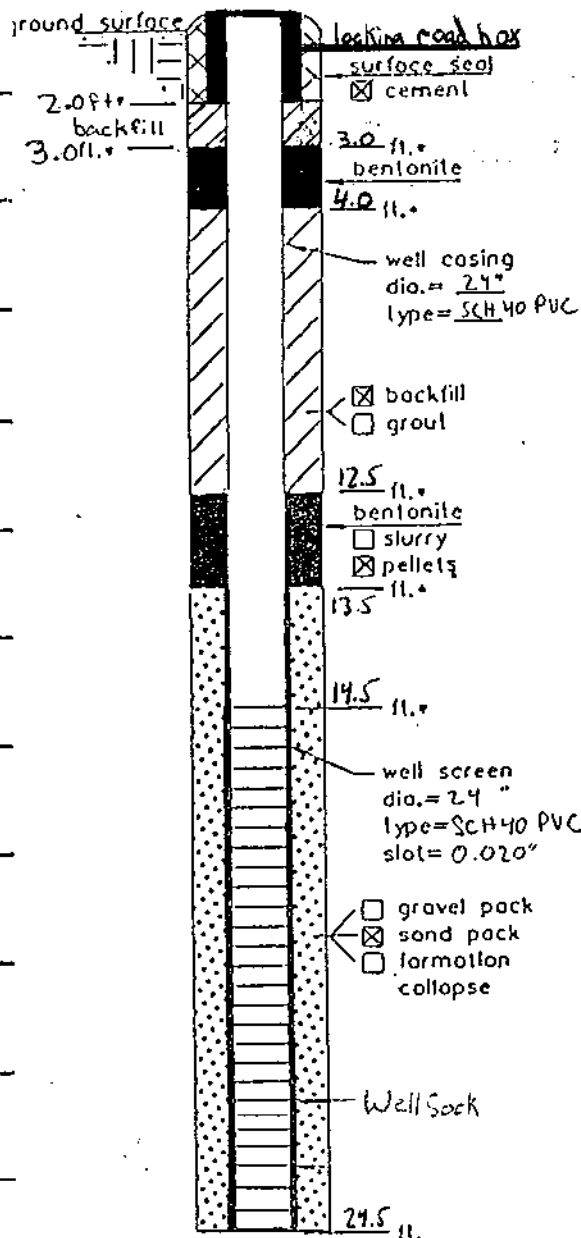
Depth: 15.0' - 17.0' Recovery: 2.0' Blows: 14-22-39-50	Brown, loamy material, with higher percentage of fine materials. At approximately 16' material turns to grey, fine sand, slightly damp. PID = 0.2 ppm
Depth: 20.0' - 22.0' Recovery: 1.8' Blows: 25-38-47-49	Light brown/grey fine sand. At approximately 20.5', material turns to more of a grey, silty clay. Very moist. PID = 0.2 ppm
Depth: 25.0' - 27.0' Recovery: 2.0' Blows: 24-38-41-44	Grey, fine, silty sand. Very moist. (New background PID = 0.6 ppm) PID = 0.6 ppm
<b>MW-3</b>	
<i>Located approximately 15' off northwest corner of Dewey Hall. (Background PD = 1.1 ppm)</i>	
Depth: 0' - 4' No sample	Dark brown sandy fill with medium size cobbles.
Depth: 4.0' - 6.0' Recovery: 1.0' Blows: 5-4-5-7	Brown, sandy loam with frequent cobbles. PID = 1.1 ppm
Depth: 9.0' - 11.0' Recovery: 1.5' Blows: 4-11-14-27	Grey, fine sand, some small cobbles present. PID = 1.1 ppm
Depth: 14.0' - 16.0' Recovery: 1.8' Blows: 13-12-12-17	Grey, fine sand. PID = 1.0 ppm
Depth: 19.0' - 21.0' Recovery: 2.0' Blows: 26-32-37-39	Grey, medium fine sand, some small stones present. PID = 1.0 ppm
Depth: 24.0' - 25.5' Recovery: 1.5' Blows: 10-14-77	Grey sand, with a higher coarse fraction. PID = 1.0 ppm
Depth: 29.0' - 30.5' Recovery: 1.8' Blows: 28-42-82	Grey, medium fine sand, moist. PID = 1.1 ppm

③



prepared by Timothy Wales, Environmental Engineer  
date 1/25/93

# WELL CONSTRUCTION LOG



client University of Vermont  
 project UVM-Dewey Hall well MW-2  
 job no. - - -

town/city Burlington  
 county Chittenden state Vermont

land surface elevation and datum ft. ☐ surveyed ☐ estimated

installation date(s) 1/14/93 - 1/15/93

drilling method Hollow Stem Auger

drilling fluid type - volume -

drilling contractor Tri-State Drilling & Boring Inc

development technique(s)	date(s)	volume of fluid <input checked="" type="checkbox"/> removed <input type="checkbox"/> added
<u>Hand Bailing</u>	<u>1/21</u>	<u>2.5 gal</u>

static depth to water 20.05 ft. below ground surface

well purpose Monitor Well

remarks

measuring point is top of well casing unless otherwise noted.

depth below ground surface

prepared by Timothy Wales Environmental Engineer  
 date 1/25/93





**ENDYNE, INC.**

Laboratory Services

32 James Brown Drive  
Williston, Vermont 05495  
(802) 879-4333  
FAX 879-7103

LABORATORY REPORT

EPA METHOD 624 WATER MATRIX

CLIENT: Wagner, Heindel, and Noyes, Inc.  
PROJECT NAME: UVM Dewey Tank  
REPORT DATE: February 9, 1993  
DATE SAMPLED: January 26, 1993  
DATE RECEIVED: January 26, 1993  
ANALYSIS DATE: February 5, 1993

PROJECT CODE: HNUV1876  
REF.#: 41,522  
STATION: MW #1  
TIME SAMPLED: 9:20  
SAMPLER: Aldrich

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Dichlorodifluoromethane	10	ND <sup>1</sup>
Chloromethane	10	ND
Vinyl Chloride	10	ND
Bromomethane	5	ND
Chloroethane	5	ND
Trichlorofluoromethane	2	ND
Acetone	50	ND
1,1-Dichloroethene	2	ND
Methylene Chloride	20	ND
Carbon Disulfide	1	ND
MTBE	3	ND
trans-1,2-Dichloroethene	2	ND
1,1-Dichloroethane	2	ND
2-Butanone	20	ND
Chloroform	10	ND
1,1,1-Trichloroethane	1	TBQ <sup>2</sup>
Carbon Tetrachloride	1	ND
1,2-Dichloroethane	1	ND
Benzene	1	ND
Trichloroethene	1	ND
1,2-Dichloropropane	1	ND
Bromodichloromethane	1	ND


**ENDYNE, INC.**

REF.#: 41,522

**Laboratory Services**

 32 James Brown Drive  
 Williston, Vermont 05495  
 (802) 879-4333  
 FAX 879-7103

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
4-Methyl-2-Pentanone	10	ND
cis-1,3-Dichloropropene	1	ND
Toluene	2	ND
trans-1,2-Dichloropropene	1	ND
1,1,2-Trichloroethane	2	ND
2-Hexanone	10	ND
Tetrachloroethene	2	ND
Dibromochloromethane	2	ND
Chlorobenzene	2	ND
Ethyl Benzene	1	ND
Total Xylenes	3	ND
Styrene	1	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	1	ND
1,3 Dichlorobenzene	2	ND
1,4 Dichlorobenzene	2	ND
1,2 Dichlorobenzene	2	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

**ANALYTICAL SURROGATE RECOVERY:**

1,2-Dichloroethane-d4 : 114.%

Toluene-d8 : 90.%

4-Bromofluorobenzene : 107.%

**NOTES:**

1 None detected

2 Trace below quantitation limit


**ENDYNE, INC.**
**Laboratory Services**

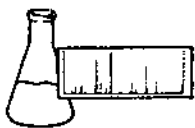
32 James Brown Drive  
Williston, Vermont 05495  
(802) 879-4333  
FAX 879-7103

LABORATORY REPORT
EPA METHOD 624 WATER MATRIX

CLIENT: Wagner, Heindel, and Noyes, Inc.  
PROJECT NAME: UVM Dewey Tank  
REPORT DATE: February 9, 1993  
DATE SAMPLED: January 26, 1993  
DATE RECEIVED: January 26, 1993  
ANALYSIS DATE: February 9, 1993

PROJECT CODE: HNUV1876  
REF.#: 41,523  
STATION: MW #2  
TIME SAMPLED: 9:50  
SAMPLER: Aldrich

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Dichlorodifluoromethane	10	ND <sup>1</sup>
Chloromethane	10	ND
Vinyl Chloride	10	ND
Bromomethane	5	ND
Chloroethane	5	ND
Trichlorofluoromethane	2	ND
Acetone	50	ND
1,1-Dichloroethene	2	ND
Methylene Chloride	20	ND
Carbon Disulfide	1	ND
MTBE	3	ND
trans-1,2-Dichloroethene	2	ND
1,1-Dichloroethane	2	ND
2-Butanone	20	ND
Chloroform	10	ND
1,1,1-Trichloroethane	1	9.3
Carbon Tetrachloride	1	ND
1,2-Dichloroethane	1	ND
Benzene	1	ND
Trichloroethene	1	ND
1,2-Dichloropropane	1	ND
Bromodichloromethane	1	ND



# ENDYNE, INC.

## Laboratory Services

32 James Brown Drive  
Williston, Vermont 05495  
(802) 879-4333  
FAX 879-7103

REF.#: 41,523

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
4-Methyl-2-Pentanone	10	ND
cis-1,3-Dichloropropene	1	ND
Toluene	2	ND
trans-1,2-Dichloropropene	1	ND
1,1,2-Trichloroethane	2	ND
2-Hexanone	10	ND
Tetrachloroethene	2	ND
Dibromochloromethane	2	ND
Chlorobenzene	2	ND
Ethyl Benzene	1	ND
Total Xylenes	3	ND
Styrene	1	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	1	ND
1,3 Dichlorobenzene	2	ND
1,4 Dichlorobenzene	2	ND
1,2 Dichlorobenzene	2	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

### ANALYTICAL SURROGATE RECOVERY:

1,2-Dichloroethane-d4 : 121.%

Toluene-d8 : 91.%

4-Bromofluorobenzene : 105.%

### NOTES:

1 None detected


**ENDYNE, INC.**
**Laboratory Services**

 32 James Brown Drive  
 Williston, Vermont 05495  
 (802) 879-4333  
 FAX 879-7103

LABORATORY REPORT
EPA METHOD 624 WATER MATRIX

 CLIENT: Wagner, Heindel, and Noyes, Inc.  
 PROJECT NAME: UVM Dewey Tank  
 REPORT DATE: February 9, 1993  
 DATE SAMPLED: January 26, 1993  
 DATE RECEIVED: January 26, 1993  
 ANALYSIS DATE: February 5, 1993

 PROJECT CODE: HNUV1876  
 REF.#: 41,524  
 STATION: MW #3  
 TIME SAMPLED: 10:05  
 SAMPLER: Aldrich

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Dichlorodifluoromethane	10	ND <sup>1</sup>
Chloromethane	10	ND
Vinyl Chloride	10	ND
Bromomethane	5	ND
Chloroethane	5	ND
Trichlorofluoromethane	2	ND
Acetone	50	ND
1,1-Dichloroethene	2	ND
Methylene Chloride	20	ND
Carbon Disulfide	1	ND
MTBE	3	ND
trans-1,2-Dichloroethene	2	ND
1,1-Dichloroethane	2	ND
2-Butanone	20	ND
Chloroform	10	ND
1,1,1-Trichloroethane	1	ND
Carbon Tetrachloride	1	ND
1,2-Dichloroethane	1	ND
Benzene	1	ND
Trichloroethene	1	ND
1,2-Dichloropropane	1	ND
Bromodichloromethane	1	ND



# ENDYNE, INC.

## Laboratory Services

32 James Brown Drive  
Williston, Vermont 05495  
(802) 879-4333  
FAX 879-7103

REF.#: 41,524

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
4-Methyl-2-Pentanone	10	ND
cis-1,3-Dichloropropene	1	ND
Toluene	2	ND
trans-1,2-Dichloropropene	1	ND
1,1,2-Trichloroethane	2	ND
2-Hexanone	10	ND
Tetrachloroethene	2	ND
Dibromochloromethane	2	ND
Chlorobenzene	2	ND
Ethyl Benzene	1	ND
Total Xylenes	3	ND
Styrene	1	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	1	ND
1,3 Dichlorobenzene	2	ND
1,4 Dichlorobenzene	2	ND
1,2 Dichlorobenzene	2	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

### ANALYTICAL SURROGATE RECOVERY:

1,2-Dichloroethane-d4 : 115.%

Toluene-d8 : 109.%

4-Bromofluorobenzene : 98.%

### NOTES:

1 None detected



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**LABORATORY REPORT**

**EPA METHOD 624 WATER MATRIX**

CLIENT: Wagner, Heindel, and Noyes, Inc.  
PROJECT NAME: UVM Dewey Tank  
REPORT DATE: February 9, 1993  
DATE SAMPLED: January 26, 1993  
DATE RECEIVED: January 26, 1993  
ANALYSIS DATE: February 4, 1993

PROJECT CODE: HNUV1876  
REF.#: 41,521  
STATION: Trip Blank  
TIME SAMPLED: 8:00  
SAMPLER: Aldrich

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Dichlorodifluoromethane	10	ND <sup>1</sup>
Chloromethane	10	ND
Vinyl Chloride	10	ND
Bromomethane	5	ND
Chloroethane	5	ND
Trichlorofluoromethane	2	ND
Acetone	50	ND
1,1-Dichloroethene	2	ND
Methylene Chloride	20	ND
Carbon Disulfide	1	ND
MTBE	3	ND
trans-1,2-Dichloroethene	2	ND
1,1-Dichloroethane	2	ND
2-Butanone	20	ND
Chloroform	10	ND
1,1,1-Trichloroethane	1	ND
Carbon Tetrachloride	1	ND
1,2-Dichloroethane	1	ND
Benzene	1	ND
Trichloroethene	1	ND
1,2-Dichloropropane	1	ND
Bromodichloromethane	1	ND



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REF.#: 41,521

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
4-Methyl-2-Pentanone	10	ND
cis-1,3-Dichloropropene	1	ND
Toluene	2	ND
trans-1,2-Dichloropropene	1	ND
1,1,2-Trichloroethane	2	ND
2-Hexanone	10	ND
Tetrachloroethene	2	ND
Dibromochloromethane	2	ND
Chlorobenzene	2	ND
Ethyl Benzene	1	ND
Total Xylenes	3	ND
Styrene	1	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	1	ND
1,3 Dichlorobenzene	2	ND
1,4 Dichlorobenzene	2	ND
1,2 Dichlorobenzene	2	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

### ANALYTICAL SURROGATE RECOVERY:

1,2-Dichloroethane-d4 : 108.%

Toluene-d8 : 98.%

4-Bromofluorobenzene : 104.%

### NOTES:

1 None detected